A formal language is composed of a set of non-terminal symbols, which in this case is N, a set of terminal symbols, E, a set of production rules, which determines what are the strings within the language (in the simplest case they can be thought as mappings from a set of strings with some specified features to another set of strings with some other specified features), mapping a string to a string, a set of transformation rules (which in the case of a formal logic are the inference rules), each mapping a n-uple of strings (again with some predefined features) to a string, and a set of axioms.

The production rules are:

1) replace the start symbol "S" by the token "xBy", where $x, y \in$ E, with $x \neq y$;

2) replace an occurrence of "xx", $x \in$ E by the symbol "T", T $\in$ N.

The transformation rule is:

For any two sentences ϕ, ψ of the language, "X^s" is a sentence of the language, where X is the end symbol and s is the number of occurrences of "xx" in ϕ added to the number of occurrences of "yy" in ψ, with $x, y \in$ N and $x \neq y$. "X^s" is a string of X's with length s ("XXXX...X").